

The Operative Treatment of Chronic Intestinal Stasis

By WILLIAM SEAMAN BAINBRIDGE, A.M., Sc.D., M.D., C.M.
New York, N. Y.

REPRINT FROM

THE SOUTHERN MEDICAL JOURNAL

Journal of the Southern Medical Association
Birmingham, Alabama.

Vol. viii

JULY, 1915
Pages 571-577

No. 7

THE OPERATIVE TREATMENT OF CHRONIC INTESTINAL STASIS.*

BY WILLIAM SEAMAN BAINBRIDGE, A.M.,
Sc.D., M.D., C.M.,
New York, N. Y.

The trend of the times in the matter of house-building has been steadily toward improvement in every detail. Now, even in the rural districts, the housewife is relieved of many of her erstwhile domestic burdens by the sanitary house-builder, or by the architect who is an adherent of modern efficiency methods. As it is with the home and the business house, so it is with the sanitation of the country, the village and the city. The fact that the laws of sanitary science have penetrated even the jungle and the swamp is proved by the history of the wonderful campaigns which have been waged for the eradication of yellow fever, malarial fever and certain other scourges which are known as filth diseases.

The question may be asked whether, coincidental with the perfection of sanitary science as applied to housebuilding and to the ordering of cities and country, there has been developed a general system of sanitation for the human body, notable alike in inhabitants of country, village and city. This, apparently, is not the case. The complexities of civilization seem to have made for detriment rather than improvement in human plumbing, or rather, to the keeping in good condition by the individual, of the system of sanitation with which nature has equipped the human species. All the accessory factors which make for perfect body-sanitation—skin, teeth, salivary

glands—are more or less defective in civilized man, and their functions are more or less impaired. The exceptions rather prove the rule. As a consequence, more work, or work of an unaccustomed quality, is thrown upon the essential factors—the stomach and the intestines.

If, perchance, the stomach is not fully equal to the superimposed task, which is often the case in consequence of the many abuses to which it is subjected, it sends the food on into the intestines improperly prepared. Or perhaps the muscles of the stomach, overworked, are not strong enough to expel the food, so that it is left to ferment and decay, a further impairment of the drainage system takes place and a condition of stasis supervenes in this vital portion of the sanitary plant.

Worst of all, however, is the crippling of that portion of the drainage system which we know as the intestines, both large and small. This tortuous canal, with its approximate length of six times that of the body, furnishes fruitful soil for abnormalities resulting, many believe, from the change of posture from the all-four position of lower animals to the erect position of man.

This change of posture, according to some students of comparative and developmental anatomy, has called for a reconstruction of the mechanical principles governing body-drainage. Portions of the alimentary tract which, in lower animals, were essential to or at least important in the processes of digestion, assimilation and elimination, are now considered by some investigators to be rudimentary, non-functioning, or, if functioning, not a necessary part of the great plumbing system by which the perfect sanitation of the body is maintained.

Thus, in 1901, Sir W. Arbuthnot Lane, of London, for the first time having reached the conclusion that the human cecum and ascending colon, acting as a "cesspool," might safely be eliminated, suited the action to the theory by excluding the large intestine from the drainage scheme, performing in certain cases

*Epitome of the Jerome Cochran Oration on Surgery, before the Medical Association of Alabama, Birmingham, April 20-24, 1915.

his now justly celebrated "short circuit" operation (ileo-colostomy), and later his operation of ileo-colostomy with colectomy. In substantiation of his views and in vindication of his surgical procedures, Lane has elaborated the mechanical principles upon which he believes the human plumbing system operates, and has directed attention to the important part played in the life history of the individual by a delay in the passage of material along this great drainage canal, the alimentary tract.

According to Lane's theory the mechanical relations of the alimentary tract, particularly of the large bowel, are changed in consequence of the assumption by man of the erect posture, and the results of these changes are augmented by the sedentary habits of civilized man. In consequence of the upright position there is a tendency to general and persistent enteroptosis, particularly marked with reference to the large bowel. Nature attempts to relieve the strain of this persistent enteroptosis, and the dragging of the displaced bowel is offset, as it were, through hypertrophy of its membranous supports—"the crystallizations of lines of force," or "the crystallizations of resistance." These supports are variously called "bands," "folds," "veils," and "membranes."

Lane has shown that these adventitious intra-abdominal structures were formed by nature, in the first instance, for the purpose of offsetting the newly-acquired visceroptotic tendency, and of facilitating drainage. In consequence, however, of an unequal support in different portions of the canal, these structures may and do become the cause of very material obstruction as the result of the kinking of the gut to which they give rise. This obstruction occurs most frequently at certain points of predilection, as given below:

(1) In the third part of the duodenum, at the duodeno-jejunal junction. (2) At different points along the terminal ileum. (3) In the ileo-cecal region, including the appendix. (4) In the region of the hepatic flexure and the first part of the transverse colon. (5) At

the splenic flexure. (6) At the sigmoid loop. (7) In the pelvic colon or rectum.

As an immediate result of the kinking of the gut by these structures there is a slowing in the passage of the contents, varying in degree according to the location of the kink, the severity of the interference and various other factors. To the immediate condition resulting from this interference Lane has applied the term "chronic intestinal stasis."

Referring to the idea, maintained by some, that he is investing "simple constipation" with new importance and significance, Lane calls attention to the fact that constipation, which is generally considered to involve the large bowel, particularly in its lower part, may exist to a marked degree without overtaxing the organs of digestion, assimilation and elimination to such an extent as to give rise to the symptomatology of auto-intoxication. With chronic intestinal stasis, however, far-reaching results may ensue. The delay in the passage of the contents of the canal results in the absorption into the circulation of more toxic matter than the organs of conversion and elimination can deal with. "The excess of these poisons," according to Lane, "circulating through the body cannot be dealt with effectually by those organs whose business it is to render them as innocuous as possible. They produce degeneration in every tissue, and a very definite and unmistakable series of symptoms results." Every tissue of the body is affected to a greater or less extent, giving rise to far-reaching evil effects.

From a study of Lane's work and his cases, both by personal observation and by reading his published reports, and from my own experience and that of others, I have come to classify my cases of chronic intestinal stasis, according to treatment, under three general groups:

First Group—Beginning cases, in which, by preventive measures, a definite condition of stasis may be obviated.

Mid Group—Mild cases, in which, by preventive measures and by moderate surgical

procedures, such as cutting bands, replacing hollow organs, changing angles, etc., the severer degrees of stasis are forestalled and the necessity of more radical surgical measures may be obviated.

End Group—*Advanced cases*, in which, despite preventive treatment, or because of inefficient treatment, the condition progresses to the degree of stasis which requires the more radical surgical procedures, such as short-circuiting (ileo-colostomy), or ileo-colostomy with colectomy.

The hygienic, dietetic and supportive measures which are applicable to the treatment of patients of the *first group* are equally applicable in the after-care of patients of the other two groups. An essential part of this treatment is a properly fitted abdominal belt. Any belt which subserves the purpose may be used as a temporary support to aid nature in restoring tone. The mere matter of ordering a belt, however, is not sufficient—the belt must be adapted to the individual patient, and must be properly applied at all times, as may be demonstrated by X-ray examination.

In the treatment of the *mid group* cases it is necessary to perform laparotomy for the purpose of applying milder the surgical procedures mentioned. In cutting bands it is important to remember that bands should be cut transversely and sewed up longitudinally, thus giving greater play to the constricted portion of gut. Great care should be exercised, too, to prevent the leaving of any raw surfaces or rough edges, which would prove fruitful soil for the formation of adhesions. If necessary the appendix is removed.

The part played by the cecum in the production of chronic intestinal stasis has called forth much discussion and various methods of dealing with this particular part of the drainage canal, by anchoring, plicating or otherwise endeavoring to restore it to normal proportions and function. I have sometimes found it advantageous to employ the plication method, as illustrated in Figs. 1, 2 and 3. I

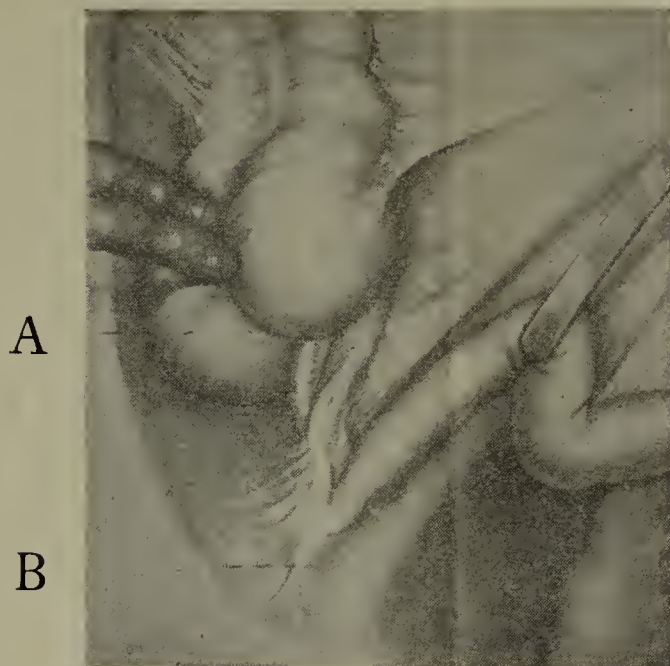


Fig. 1.—Condition found at operation: Much enlarged mobile cecum; ileal kink.

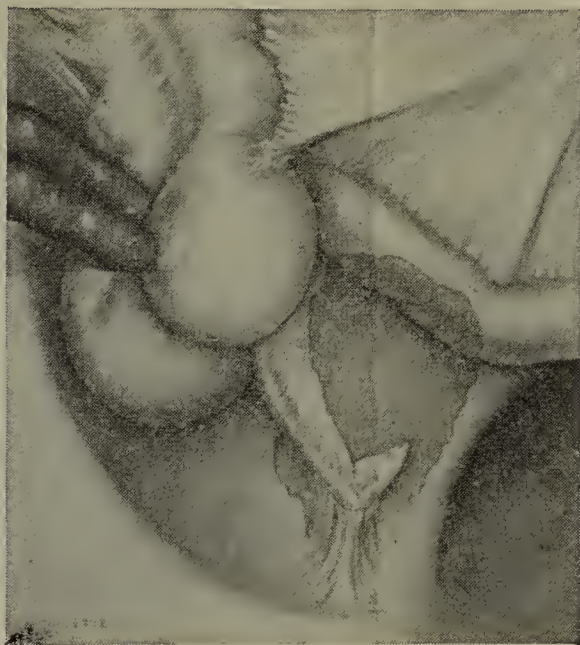


Fig. 2.—Band severed transversely, leaving raw surface to be covered. Kink relieved.

use interrupted stitches instead of the continuous sutures, as employed by Blake and others. The plication is extended well up into the flank, to a point where the gut is fairly well fastened to the abdominal wall. It is yet to be determined whether this, or any of the methods devised for the prevention of stasis in the cecum, will stand the test of time, and whether, after all, the cecum cases will not have to be from the mid group category, in which no attempt is made at removal, to the end group, in which removal of some portion or the whole of the large bowel, or at least diverting the course of the drainage, is the object to be attained.

The covering over of raw surfaces and the

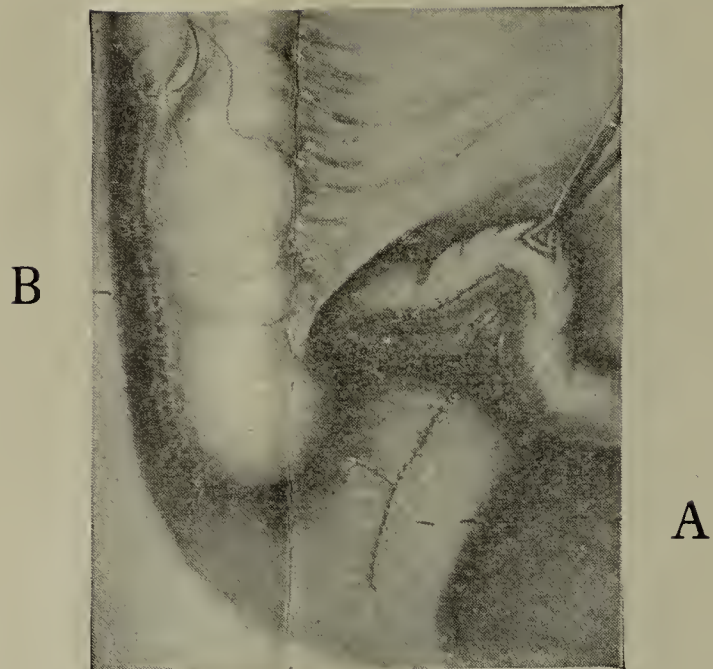


Fig. 3.—Raw surface covered with flaps of peritoneum by interrupted stitches. Cecum and ascending colon plicated and fixed to abdominal wall.

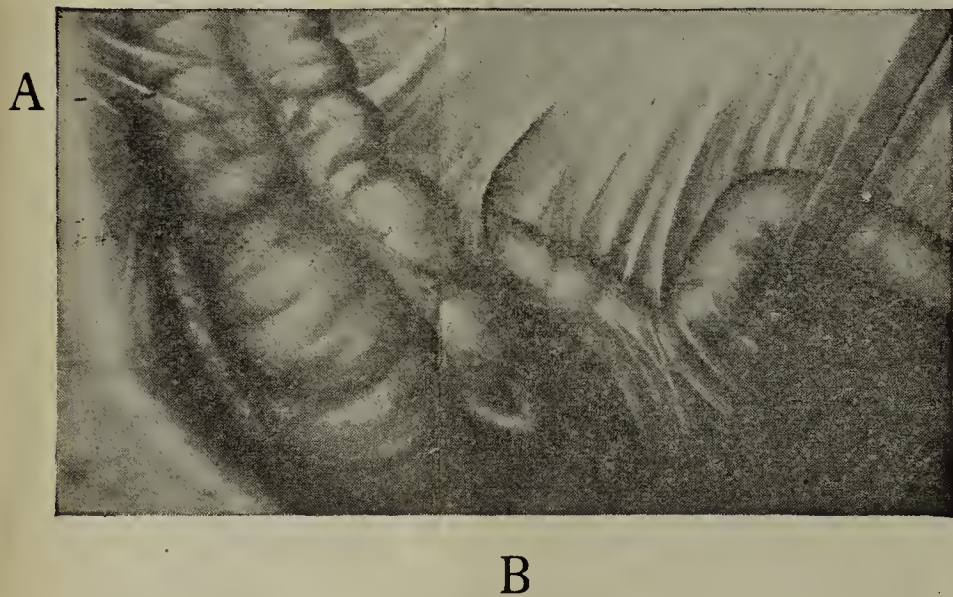


Fig. 4 (from British Medical Journal, November 1, 1913).—A. Pericolic membrane ("Jackson's membrane"); B. Appendix kinked behind cecum; C. Ileo-pelvic band.



Fig. 5.—Conditions in Fig. 4 corrected. A. Appendix removed; B. Piece of detached omentum covering area of band severed, impossible to cover by suturing.

prevention of adhesions is of the utmost importance in the correction of the conditions which cause chronic intestinal stasis. Figs. 4 and 5 illustrate the severing of broad bands, and the covering over of the remaining raw surfaces with a piece of detached omentum. Figs. 6 and 7 show the method of covering the raw surfaces by means of omentum not detached, but simply sutured in place over the area to be covered.

In the *end group* cases two methods are generally employed, according to the individual cases, viz., ileo-colostomy (Lane's "short-circuiting" operation) and ileo-colostomy with colectomy.

The care of the patient before, during and after operation is the same for ileo-colostomy and for colectomy. It is of the utmost importance in either case. The hygienic, dietetic and supportive measures which are applicable in the management of patients of the first group, and with which I have dealt fully elsewhere,* are equally applicable in the after-care of patients of the other two groups.

C The immediate preparation of the patient for operation is commenced two days before. An ounce of castor oil is given, followed by a soap enema night and morning for two days. During this time the patient is kept on a strict liquid diet. A half-ounce of brandy every four hours may be given to weak and delicate patients. The entire abdomen is subjected to the most careful sterilization. An hour before operation an injection of morphia, 1-6 gr., with atropin sulphate, 1-50 gr., is administered, followed by the open ether method of anesthesia.

B When the patient is anesthetized, infusion needles are inserted subcutaneously into the axillae, previously painted with iodine, and normal saline solution is administered throughout the operation, usually from four to six pints being absorbed. For this purpose Lane's hypodermoclysis apparatus is employed. A rectal tube is inserted during the operation, after

*Bainbridge—Chronic Intestinal Stasis. Types of Cases. Preventive and Medical Treatment Outlined.—Woman's Medical Journal, January, 1914.

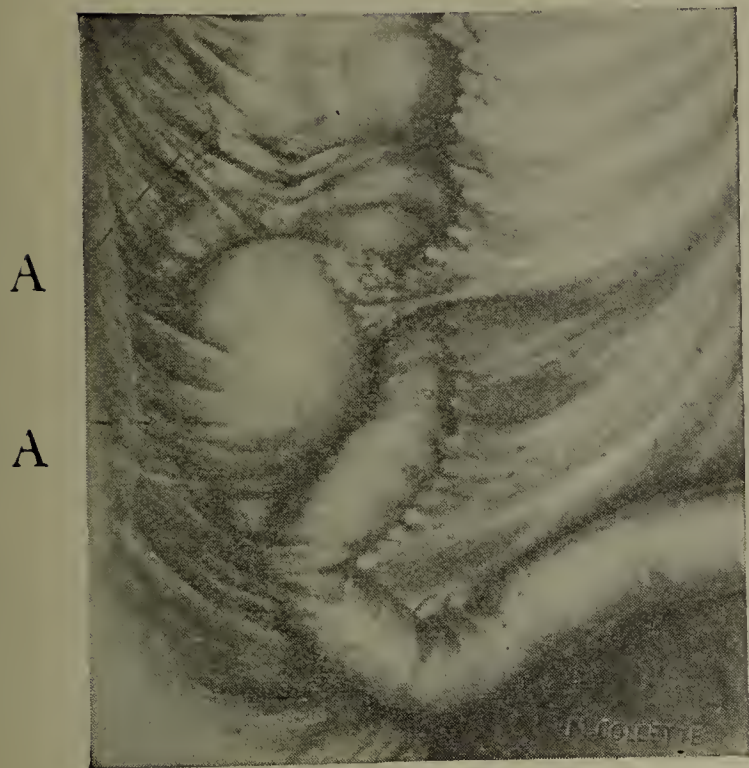


Fig. 6.—Inflammatory adhesions following appendiceal abscess; twisting of cecum and obstruction of ileum.

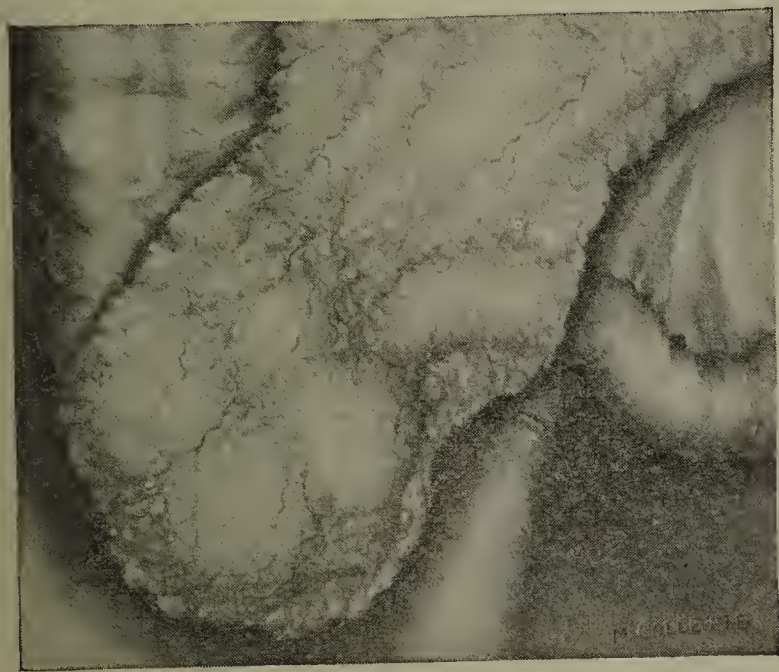


Fig. 7.—Condition in Fig. 6 corrected. Raw surfaces covered by omental flap still connected with omentum.

the anastomosis is made and before the abdominal wall is closed. When the patient is returned to bed this tube, which is attached in place near the anal outlet, is connected with a long piece of rubber tubing, and drains into a receptacle at the side of the bed. It remains in for six days. The average drainage is about fourteen to twenty ounces a day.

When completely recovered from the anesthetic the patient is placed in the true Fowler position, practically sitting upright in bed. For the first two days after operation the pulse is taken every hour and the temperature every

four hours. The sutures are removed, as a rule, on the fourteenth day, and a gauze dressing applied. For the first two days the patient is given only water, egg albumen, beef juice, plasmon and brandy, for the next four days, going in gradually to jelly and custards. During convalescence nothing heavier than fish and chicken is given. Pure liquid paraffin (Russian Mineral Oil) one ounce or less three times a day, for as long as is necessary, is given after the third day. It is better to add a little essence of orange or lemon, or the desired aromatic, is given. Milk of magnesia may be used as needed, if the Russian Mineral Oil is not borne well, or until the patient sits up. The patient is usually allowed on a couch at the end of the fourth week and is discharged at the end of the sixth week.

Technic of Ileo-colostomy (Short Circuit)—The incision, to the left of the median line, divides both layers of the rectus, and extends from about two inches above the umbilicus nearly to the symphysis pubis. The peritoneum divided, and the parts properly protected by sterile cloths, a thorough examination is made of abdominal contents. Ileo-colostomy having been determined upon as the result of this examination, the ileum is grasped by two compression forceps, which are placed transversely across it and as close together as possible. The bowel between the forceps is cut through with the cautery. As a rule the point at which the ileum is cut through is within a few inches of its termination, though this varies with circumstances. A suture is threaded through the distal end of the ileum, including the forceps in its several loops. The forceps are then removed, and the thread tightened and knotted, this end of the ileum being thus secured. The sutured end is next invaginated. The pelvic colon is now drawn up into the incision, emptied of its contents and grasped between the blades of Lane's gastro-enterostomy forceps. The proximal end of the ileum is emptied of its contents, with a very light pair of compression forceps

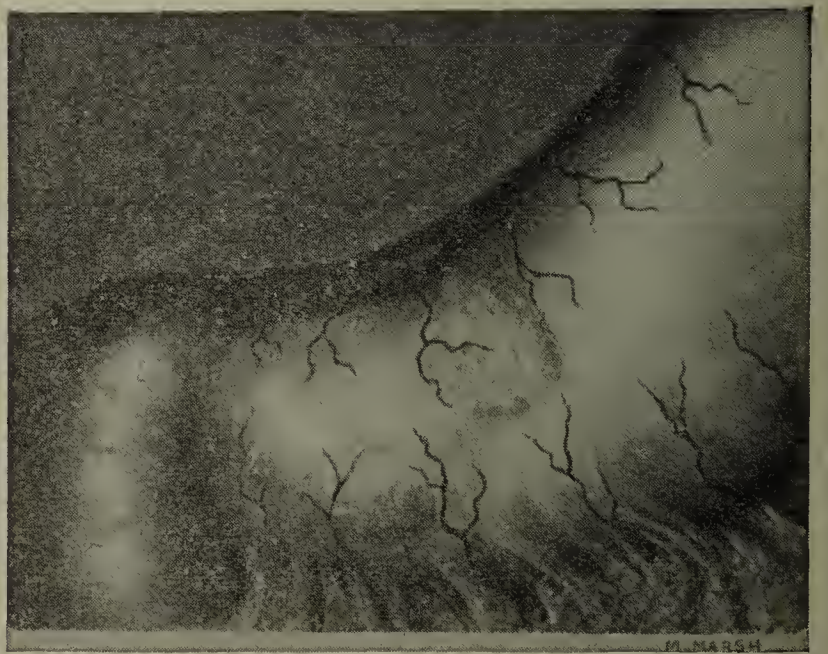
it is held in position against the part of the colon at which the juncture is to be made. An incision along the length of the colon is made, of a size corresponding to the calibre of the ileum. The ends of the ileal aperture and of the aperture in the colon are secured by toothed forceps. The adjacent margins of the apertures in ileum and colon are now securely united by means of a buttonhole suture. The controlling forceps are removed, the ileo-colostomy junction reinforced by one or two additional rows of sutures which perforate the peritoneal and muscular coats, the small intestines are drawn upwards out of the pelvis, and are held in this position while the free surfaces of the pelvic mesentery are attached to the free surface of the mesentery of the ileum by a buttonhole suture. An esophageal tube is inserted into the anus and passed along the rectum, its passage being facilitated by injecting paraffin into the tube by means of a Higginson syringe. The tube is passed through the opening in the colon, and for about twelve inches along the ileum. It is secured in the anal region in the male and to the back of the vulva in the female. This is connected to the tubing and vessel referred to in the after-care of the patient.

Technic of Colectomy.—An incision of the same kind but a little longer than the one employed for ileo-colostomy alone is made when colectomy is to be performed. The importance of making a free incision is to be emphasized. It is essential that a full view of the abdominal cavity be obtainable. Ileo-colostomy (according to the technic just described) having been performed on a previous occasion, or as a preliminary step of the present operation, the large bowel is now separated one and a half to two inches above the ileo-colic junction. This is accomplished as in the case of the ileum, by grasping the bowel between two forceps and dividing between with the cautery. The meso-colon from the cecum on is tied off in sections, and the large bowel, thus exsected, is removed from the abdominal cavity. The cut end of the

pelvic colon is closed with a running suture, and is buried, about on a level with the upper limit of the ileo-colostomy, by means of an encircling suture which includes the peritoneal and muscular coats. In order to prevent subsequent sacculation, the cut end may be closed and sutured to fascia of pelvic wall. The esophageal tube is passed in the same manner as in ileo-colostomy, and the after-care of the patient is the same.

While these surgical procedures and the various methods of intervention which have been proposed may not be ideal, the condition of chronic intestinal stasis, as we now understand its far-reaching import, certainly calls for radical intervention in some cases, and the methods described seem to be the best suggested up to the present moment. With continued study of these cases and their treatment undoubtedly the ideal method will be evolved.

Furthermore, many other knotty problems in medicine and surgery may be cleared up through the study of chronic intestinal stasis. We are not all in accord with all Lane's views concerning the association of other disease with chronic intestinal stasis from an etiological point of view, but it cannot be definitely stated, at this stage of the evolution of the entire subject, that he is either right or wrong.



A

Fig. 8.—A. Carcinoma of stomach; B. Distended duodenum, resulting from kink at duodeno jejunal junction.

BAINBRIDGE: OPERATIVE TREATMENT OF CHRONIC INTESTINAL STASIS.

In my own experience some remarkable surprises have been encountered, which have pointed the way to further investigation. For example, in a number of cases of chronic intestinal stasis in subjects who are epileptic, operation for stasis has appeared to cause complete cessation or marked decrease in frequency and severity of the attacks of epilepsy. It is too early yet to forecast the ultimate outcome of such cases, but there is reason to believe that in some cases of epilepsy of other than central origin amelioration if not cure may be obtained by the permanent cure of chronic intestinal stasis. Melancholia, lumps

in the breast, albumin and casts in urine, and other untoward conditions, have disappeared after relief of stasis.

Lane has long contended that cancer, among other diseases, is associated etiologically with chronic intestinal stasis. Such a contention is manifestly difficult of proof, but should nevertheless be given careful consideration. Fig. 8 illustrates a case in which there is strong presumptive reason for thinking that there may be some causative factors in common between the two conditions, or that one is superimposed upon the other as a result thereof.

